



RECEIVED

JUN 16 2003

## Claims Amendments

TECH CENTER 1600/2900

What I claim as my invention Is:

### **Claim 1** (Currently Amended)

~~1- A detector that can detect, Monitor & register the resistance of the tissues to piercing, its resistance to passage of electrical current & the electrical activity of the tissues to help in identification of the nature of the tissue during needle biopsy before the actual cutting of the tissue as well as prediction of the nature of its pathology.~~

~~1- A visual, auditory or electrical intensity or voltage detector (Ammeter or voltmeter) with possibility of adding a registering unit on sensitive paper for the physical resistance to entry of the sensor in different tissues while applying a constant pressure,~~

~~2- A visual, auditory or electrical intensity or voltage detector (Ammeter or voltmeter) with possibility of adding a registering unit on sensitive paper for the electrical resistance to passage of the electrical current in different tissues.~~

~~3- The registering unit for the electrical activity of different tissues similar to that used in the (E.C.G.), (E.E.G.) or (E.M.G.).~~

A cylindrical probe that is introduced through the body surfaces to the target tissue through a hollow cylindrical metal sheath to identify the tissue type and predict the nature of its pathology for an anomalous tissue before actual cutting of the biopsy by detecting the mechanical resistance of the tissues to piercing, by having an electrical circuit composed of

- a compressible tip fixed to the end of the probe through a coiled wire sliding over the surface of an inbuilt changeable electrical resistance as well as a metal blade,
- a <sup>first</sup> wire running inside the body of the probe connecting one terminal of the resistance to the electrical source
- an electrical source located at the handle of the probe or separately outside the probe
- an Ammeter or Voltmeter to detect the electrical current intensity or voltage with possibility of adding a registering unit on sensitive paper and
- a <sup>second</sup> wire running inside the body of the probe connecting the electrical source to the metal blade.

so that

the nature of the target tissue is detected by monitoring the change in the electrical resistance in the circuit which will indicate the resistance faced by the tip of the probe during its passage in the target tissues with a constant speed

followed by replacement of the probe with the cutting grooved biopsy needle of identical size and length through the (same) metal sheath to cut the target tissue for biopsy without the need to introduce through a different orifice.

## **Claim 2**(Currently Amended)

- 1- ~~The sensor of the detector have the same size & shape of the internal needle of the biopsy needle so that it can be used simultaneously during the biopsy taking without the need to introduce through a different orifice.~~

- 2- ~~The sensor has an inbuilt changeable resistance that changes according to the resistance faced by the needle during introduction in the tissue with a constant speed.~~
- 3- ~~The sensor has 2 adjacent points of electrical circuit at a fixed distance. The electrical circuit is closed by the living tissues, which have different resistance to the electrical current.~~
- 4- ~~The body of the sensor as passing in the tissue work as an earth electrode (or a separate electrode can be connected to the skin) while the tip of the sensor detect the electrical activity if any - of target or the in-way tissues.~~

The previously mentioned probe is a cylindrical probe that is introduced through the body surfaces to the target tissue through a hollow cylindrical metal sheath

to identify the tissue type and predict the nature of its pathology for an anomalous tissue before actual cutting of the biopsy

by detecting the electrical resistance of the tissues to passage of electrical current,

by having an electrical circuit composed of

- <sup>first</sup> a wire running inside the body of the probe with one of its terminals at the tip of the probe & the other terminal connected to an electrical source,
- an electrical source located at the handle of the probe or separately outside the probe
- an Ammeter or Voltmeter to detect the electrical current intensity or voltage with possibility of adding a registering unit on sensitive paper and

- A <sup>second</sup> wire running inside the body of the probe with one end connected to the electrical source & the other end is located at the tip of the probe near the end of the other wire

→ so that

the nature of the target tissue is detected by monitoring the electrical resistance exerted by the tissue surrounding the tip to the passage of the current between the ends of the two wires

followed by replacement of the probe with the cutting grooved biopsy needle of identical size and length through the same metal sheath to cut the target tissue for biopsy [without the need to introduce through a different orifice.]

### **Claim 3**(Currently Amended)

~~\* A Computerized analysis unit to give instantaneous anatomical & pathological diagnostic information of the tissue at the tip of the sensor based on the data derived from the monitor.~~

[The previously mentioned probe is] (a cylindrical probe that is introduced through the body surfaces to the target tissue through a hollow cylindrical metal sheath

to identify the tissue type and predict the nature of its pathology for an anomalous tissue before actual cutting of the biopsy

by detecting the electrical impedance of the tissues

by having an electrical circuit composed of

- a sensor at its tip to detect the electrical impedance of the target tissue

- A wire running inside the body of the probe with one of its terminals at the tip of the probe & the other terminal connected to the electrical impedance monitor

- A wire connecting the electrical impedance monitor to the body of the probe, which will work as a neutral isoelectric point.

→ so that

the nature of the target tissue is detected by monitoring the electrical impedance exerted by the tissue surrounding the tip

followed by replacement of the probe with the cutting grooved biopsy needle of identical size and length through the same metal sheath to cut the target tissue for biopsy without the need to introduce through a different orifice.

*W E W*